CLAIM AMENDMENTS

Claim 1 (previously presented): A method for updating a shared data element group while preserving group integrity on behalf of one or more readers that are concurrently referencing group data elements without using locks or atomic instructions, comprising:

generating a new group data element;

assigning a new generation number to said new data element that is different than an existing global generation number associated with said data element group and which allows a reader of said data element group to determine whether said new data element is a correct version for said reader;

establishing a first version link from said new data element to a prior version thereof having a different generation number;

establishing a second version link from said prior version to said new data element;

linking said new data element into said data element group so that it is reachable by readers;

updating said global generation number associated with said data element group to correspond to said new generation number; and

freeing said prior version and said first and second version links following a grace period.

Claim 2 (original): A method in accordance with claim 1 wherein said method is used to replace a group data element and said new data element is generated by copying said data element to be replaced.

Claim 3 (original): A method in accordance with claim 1 wherein said method is used to delete a group data element and said new data element is generated by copying said data element to be deleted and setting a deletion flag in said new data element.

Claim 4 (original): A method in accordance with claim 1 wherein said method is used to insert a new group data element and said new data element has no prior versions.

Claim 5 (original): A method in accordance with claim 1 wherein said method further includes generating a pointer-forwarding entity that points to said new data element, said pointer forwarding entity maintaining said version link on behalf of said new data element and further being used to link said new data element into said data element group.

Claim 6 (previously presented): A method for updating a shared data element group while preserving group integrity on behalf of one or more readers that are concurrently referencing group data elements without using locks or atomic instructions, comprising:

generating a pointer-forwarding entity that points to a data element in said data element group;

assigning a new generation number to said pointer-forwarding entity that is different than an existing global generation number associated with said data element group and which allows a reader of said data element group to determine whether said pointer-forwarding entity is a correct version for said reader;

establishing a first version link from said pointer-forwarding entity to a prior version thereof;

establishing a second version link from said prior version to said new data element;

linking said pointer-forwarding entity into said data element group so that said data element pointed to by said pointer-forwarding entity is reachable by readers through said pointer-forwarding entity;

updating said global generation number associated with said data element group to correspond to said new generation number; and

freeing said prior version and said first and second version links following a grace period.

Claim 7 (original): A method for performing a search of a shared data element group that may be undergoing modification in accordance with the method of claim 1, comprising:

assigning a current global generation number to said search;

when referencing a data element in said data element group, determining whether said referenced data element is a correct version by comparing a generation number assigned to said referenced data element with said search generation number; and

searching for a correct version of said referenced data element as necessary.

Claim 8 (original): A method in accordance with Claim 7 wherein, if said data element generation number is equal to said search generation number, said referenced data element is accepted for reading as a correct version.

Claim 9 (original): A method in accordance with Claim 7 wherein, if said data element generation number is less than said search generation number, a search is made for a later version of said referenced data element, and wherein said referenced data element is used if a later version is not found.

Claim 10 (original): A method in accordance with Claim 7 wherein, if said data element generation number is greater than said search generation number, a search is made for a prior

version of said referenced data element, and wherein said referenced data element is deemed to be a new insertion if there is no prior version.

Claims 11-31 (canceled).